

### REMARKS

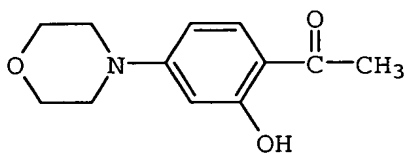
Claims 1-37 are pending in the application. Claims 2-37 have been withdrawn from consideration as being drawn to a nonelected invention. Claim 1 has been cancelled by this amendment, and new claims 38-41 have been added. Accordingly, claims 38-41 are at issue.

Applicants present new independent claim 38 for clarity. The substantial amendments made to claim 1 would have rendered an amended claim 1 confusing. New claim 38 is fully supported by the specification and the originally filed claims. New claim 38, which in substance is an amended claim 1, conforms the scope of the claims to the elected invention, and addresses the 35 U.S.C. §112, §102, and §103 issues presented by the examiner. The individual rejections are discussed separately below, together with the recitations in claim 38 that overcome the rejections.

New claims 39-41 are supported by the specification. Claims 39 and 40 generally conform to originally filed claims 4 and 5, amended to conform to the elected invention. New claim 41 is supported by Example 34 at pages 111-112 of the specification.

### Election/Restriction Requirement

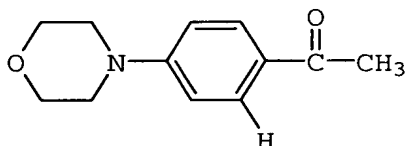
The examiner issued a twelve-way restriction requirement. Applicants affirm the election of 1-(2-hydroxy-4-morpholin-4-yl-phenyl)ethanone, e.g.,



This election conforms to examiner's Group IA, i.e., compounds of claims 1-5 and 11, wherein A is 4-morpholinyl and each Z is CR<sup>3</sup>.

New independent claim 38 more specifically recites the elected invention, i.e., A is 4-morpholinyl, two Z groups are CH, and one Z group, and one Z group is CR<sup>3</sup>. New dependent claims 39-41 recite preferred embodiments found in the examples, including a specific claim to the elected species. The claims recite compounds that fall within the scope of the examiner's search described in the fourth paragraph, page 4, of the Office Action.

In the Office Action, the examiner states that the elected compound is excluded by the proviso in original claim 1. This statement is incorrect. The excluded compound encompassed by the proviso referred to in claim 1 has a structure



The elected compound has a structure different from the above compound, i.e., R<sup>2</sup> is -OH as opposed to -H. New independent claim 38 excludes -H as an R<sup>2</sup> substituent. Accordingly, the proviso recited in original claim 1 is not present in new claim 38. The second proviso in

original claim 1 also is not recited in new claim 38 because no nitrogen-containing Z group is recited in new claim 38.

#### **Rejections Under 35 U.S.C. §112**

Originally filed claim 1 stands rejected under 35 U.S.C. §112, second paragraph, as being indefinite. For the reasons set forth below, it is submitted that new claims 38-41 fully conform to 35 U.S.C. §112. The individual rejections under 35 U.S.C. §112 are discussed separately below.

(i) The preamble of each claim now is in a form suggested by the examiner, thereby overcoming this rejection under 35 U.S.C. §112.

(ii) New claim 38 does not recite a definition for ring A, but rather specifically recites 4-morpholinyl. The term "optionally substituted" is not specifically recited in claim 38, but is recited in the definition of n being an integer 0 through 2 (i.e., an R<sup>4</sup> group may be absent for the 4-morpholinyl group). New independent claim 38, therefore, overcomes this rejection under 35 U.S.C. §112.

(iii) Claim 38 unambiguously shows the point of attachment of the morpholino ring to the phenyl, thereby overcoming this rejection under 35 U.S.C. §112.

(iv) Original claim 1, and new claim 38, recite the term "substituted" with respect to recited the alkyl, heteroaryl, aryl groups. It is submitted that such recitations are definite under 35 U.S.C. §112 when the claims are read in conjunction with the specification. In particular, the term "substituted alkyl" is defined at page 12, lines 6-17, and the terms "sub-

stituted aryl" and "substituted heteroaryl" are defined at page 15, line 26 through page 16, line 2, of the specification. Accordingly, persons skilled in the art are provided sufficient guidance with respect to which substituents are permitted on these groups. It also is submitted that claim 38 would be made more unclear by incorporating the substituents disclosed in the specification into the claims. The claim is more readable as presented, and persons skilled in the art can readily ascertain acceptable substituents from the specification. Accordingly, it is submitted that the term "substituted" as used in claim 38 is clear, and that claim 38 complies with 35 U.S.C. §112.

(v) It also is submitted that the term "cycloalkyl" as recited in claim 38 is clear and definite. In particular, the term "cycloalkyl" is defined at page 13, lines 1-5 of the specification as being a nonaromatic, hydrocarbon ring containing three to six carbon atoms. For the same reasons set forth above in (iv), it is submitted that the recited term "cycloalkyl," when used in conjunction with the specification, is clear and definite to persons skilled in the art and complies with 35 U.S.C. §112.

(vi) Similarly, the term "heterocycloalkyl" is definite when the definition of the term at page 15, lines 15-25 of the specification is considered. The definition includes the total number of atoms, number of heteroatoms, identity of the heteroatoms, and several specific examples. The definition in the specification does not encompass an "-alkyl-heterocycle." Like (iv) and (v) above, it is submitted that the specification and claim provides sufficient guidance to persons

skilled in the art as to the identity of "heterocycloalkyl" groups, and that the term as used in claim 38 complies with 35 U.S.C. §112.

(vii) Applicants have not included the term "carboxyl" in claim 38, and have amended the specification to add "-COOH" to the definition of "carboxy." Claim 38 recites the term "carboxy" only, as suggested by the examiner, and overcomes this rejection under 35 U.S.C. §112.

(viii) Claim 38 recites the moiety CHO, as opposed to "aldehyde." This recitation in claim 38 is supported by the specification at page 13, line 6. Accordingly, this rejection under 35 U.S.C. §112 has been overcome.

(ix) Claim 38 does not recite the term "sulfonyl." Accordingly, this rejection under 35 U.S.C. §112 is moot.

(x) The examiner considers the term "heteroaryl" indefinite. Similar to the term "heterocycloalkyl" discussed above in (vi), it is submitted that the term "heteroaryl" is definite under 35 U.S.C. §112 when the claims are read in conjunction with the specification. The specification contains a definition for "heteroaryl" at page 15, lines 6-14. The definition identifies an aromatic ring system, the number of atoms in the ring system, the number and identity of the heteroatoms, and specific examples. Accordingly, the claims, in conjunction with the specification, provide sufficient guidance to persons skilled in the art with respect to the scope of the term "heteroaryl." Accordingly, it is submitted that as used in claim 38, the term "heteroaryl" complies with 35 U.S.C. §112.

(xi) Like (x) above, the term "acyl" is fully defined in the specification at page 12, lines 25-29. The "acyl" group is defined as  $R^aC(=O)$ , which is attached to the remainder of the molecule through the carbonyl group. The  $R^a$  moiety is clearly and thoroughly defined. It is perfectly clear from the usage of "acyl" in the claims that the "acyl" is bound to a carbon atom. Accordingly, it is submitted that the term "acyl" as used in claim 38 fully complies with 35 U.S.C. §112.

(xii) Claim 38 does not recite the term "phosphate," but rather  $OP(=O)(OR^h)_2$ ." This recitation is supported by the specification at page 14, lines 29-30. Accordingly, it is submitted that this rejection of 35 U.S.C. §112 has been overcome.

(xiii) With respect to taking  $R^1$  and  $R^2$  together, the resulting ring system is not aromatic. The ring can be saturated or partially unsaturated, as recited in claim 38. See, for example, Examples 78, 139-142, and 145-148, which provides support for this phrase. In addition, a substituent on the heteroatom is contemplated, when a heteroatom is capable of substitution, i.e., a ring nitrogen atom having a substituent different from hydrogen. Also see Example 78 having a substituent on the phosphorus atom. In addition, it is difficult to foresee any other ring system beyond a monocyclic ring because only 5- and 6-membered rings are claimed. Accordingly, it is submitted that the recitation in claim 38 directed to taking  $R^1$  and  $R^2$  together to form a ring complies with 35 U.S.C. §112.

(xiv) The phrase "a halide derivative" with respect to substituent  $R^3$  is not recited in claim 38.

Hence, this rejection under 35 U.S.C. §112 is moot. Claim 38 recites "sulfonyl chloride," which finds support at page 14, lines 15 and 16 of the specification, and is an alternative form for the term "halide derivatives thereof." Accordingly, claim 38 conforms to 35 U.S.C. §112 with respect to the term "sulfonyl chloride."

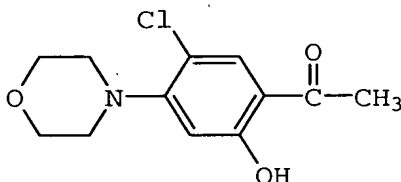
(xv) This rejection under 35 U.S.C. §112 is moot because claim 38 recites neither "ZR<sup>3</sup>" nor a proviso.

(xvi) This rejection under 35 U.S.C. §112 is moot because claim 38 does not recite a proviso.

For all of the reasons set forth above, it is submitted that independent claim 38, and claims 39-41 depending therefrom, comply with 35 U.S.C. §112, second paragraph, and that this rejection should be withdrawn.

Claim 1 also stands rejected under 35 U.S.C. §102(b) as being anticipated by GB 2,109,373 (GB '373). In view of new claims 38-41, it is submitted that this rejection is in error, and should be withdrawn.

As stated by the examiner, GB '373 discloses the following compound at page 32, line 34:



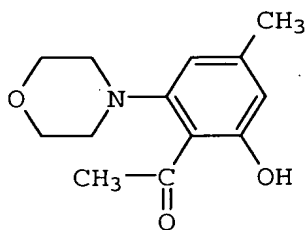
In this compound, R<sup>3</sup> is chloro, and more generally, halo. In new claim 38, R<sup>3</sup> cannot be halo, and specifically cannot be chloro. Accordingly, GB '373 does

not anticipate independent claim 38 or dependent claims 39-41.

In addition, it is submitted that a nonobvious difference exists between claims 38-41 and GB '373. In particular, GB '373 is directed to the synthesis of aminophenol acetic acids. The 5-chloro compounds disclosed at page 32 of GB '373 are intermediates in the synthesis of the desired products. GB '373 fails to suggest any other 5-position substituents, or any reason for making a substitution of substituents, that would motivate a person skilled in the art to make the modifications necessary to arrive at the presently claimed invention.

Accordingly, after reading GB '373, a person skilled in the art would have had no motivation to substitute a presently recited R<sup>3</sup> substituent for the chloro-substituent disclosed in GB '373. The present claims, therefore, would not have been obvious over GB '373 under 35 U.S.C. §103.

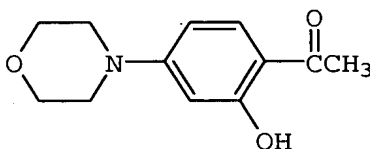
Claim 1 also stands rejected under 35 U.S.C. §103 as being obvious over an Eiden et al. publication. In particular, the examiner contends that the present claims would have been obvious over the Eiden et al. publication because the following compound is disclosed:





It is submitted that this rejection is in error and should be withdrawn.

The closest, presently claimed compound in structure to the Eiden et al. publication has the following structure (i.e.,  $R^1$  is  $C(=O)CH_3$ ,  $R^3$  is H,  $R^2$  is OH, n is 0):



This compound is substantially different from the Eiden et al. publication disclosure. Importantly, the Eiden et al. compound contains substituents that are not, and cannot be, present in a claimed compound.

In particular, the presently claimed compounds do not have a substituent at the  $CH_3$ - and  $CH_3C(=O)$ -substituted carbon atoms of the Eiden et al. compound. The presently claimed compounds are limited to hydrogen at these positions. The Eiden et al. publication provides absolutely no teaching or suggestion that these substituents can be omitted or in any way shifted to a new position on the ring.

Second, a presently claimed compound can have an acetyl group at a carbon atom *para* to the morpholino group. The Eiden et al. publication fails to teach or suggest positioning an acetyl group *para* to the morpholino group as opposed to the *ortho* position.

The Eiden et al. publication also provides no incentive for a person skilled in the art to make the modifications necessary to arrive at the presently claimed compound. In particular, the cited reference

is *limited* to teaching a synthesis of a single disclosed compound. The Eiden et al. publication is limited to this single compound without providing any motivation or incentive for a person skilled in the art to make any modifications in the disclosed structure. In fact, if modifications were made, the synthesis disclosed by Eiden et al. would be essentially useless. The cited reference also is silent with respect to altering the identity of the reactants to provide a claimed compound.

Accordingly, it is submitted that claims 38-41 would not have been obvious over the Eiden et al. reference, and that the rejection under 35 U.S.C. §103 should be withdrawn.

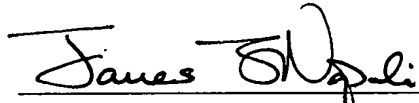
It is submitted that the claims are now in proper form and scope for allowance. Early and favorable action on the merits is respectfully requested.

Should the examiner wish to discuss the foregoing, or any matter of form in an effort to advance this application toward allowance, the examiner is urged to telephone the undersigned at the indicated number.

Respectfully submitted,

**MARSHALL, GERSTEIN & BORUN**

By

A handwritten signature in dark ink, appearing to read "James J. Napoli", is written over a horizontal line.

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